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Experimental Leading and Coincident Indexes for the Stone, Clay, Glass, and Concrete Products Industry

June 1999

In April, the U.S. Geological Survey (USGS) introduced monthly leading and coincident indexes for the stone, clay, glass, and concrete products industry (SIC 32). This industry is a manufacturing industry that processes industrial minerals, minerals that are neither metals nor fuels, into useful products. More than 50 percent of the total value of these products is shipped to the highly cyclical construction industry. The indexes have been computed for each month back to 1948, and are available on the World Wide Web at: http://minerals.usgs.gov/minerals/pubs/imii/scghist.txt

Analysis

The stone, clay, glass, and concrete products leading index increased 1.7% in May to 183.8 from a revised 180.7 in April. Its 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, also rose, up to 3.4% from a revised 0.3% in April. A 6-month smoothed growth rate above +1.0% is usually a signal of increased growth in future industry activity, while a growth rate below -1.0% usually indicates a decline in activity.[1]

All four indicators in the leading index rose in May. The largest contribution came from the S&P stock price index for building materials companies, which contributed 0.6 percentage points to the leading index increase. The length of the average workweek for production workers in the stone, clay, glass, and concrete products industry, contributed the next largest amount, 0.5 percentage points. The 10-year U.S. Treasury Note moved higher in May, causing a widening of the yield spread, which resulted in a 0.4 percentage point contribution to the leading index. And permits issued for new housing units, grew slightly, nudging the leading index up another 0.1 percentage point. The leading index has now increased two consecutive months, following two consecutive declines. However, much of this growth occurred because of increases in the stock price index, which has been volatile in recent months. Actual growth in the stone, clay, glass, and concrete products industry is likely be modest in the next few months.

[1]The 6-month smoothed growth rate is a compound annual rate based on the ratio of the current month's index to its average level during the preceding 12 months.

Current industry activity, as measured by the coincident index, increased 1.1% in May to 150.9 from a revised 149.3 in April, while its 6-month smoothed growth rate rose to 4.4% from a revised 3.1% in April.

Explanation

The USGS uses the same methodology for the stone, clay, glass, and concrete products indexes that it uses for the metal manufacturing indexes in the *Metal Industry Indicators*. This methodology consists of constructing and tracking, each month, two composite indexes of diverse economic indicators. The composite leading index for stone, clay, glass, and concrete products signals, several months in advance, major changes in current economic activity as measured by a composite coincident index. The construction of the leading and coincident indexes follows well-established procedures for the analysis of cyclical indicators that were developed at the National Bureau of Economic Research, the U.S. Department of Commerce, and the Center for International Business Cycle Research.

Coincident indicators

The indicators selected to represent current activity in the coincident index for the stone, clay, glass, and concrete products industry are industrial production, the value of shipments in 1982 dollars, and total employee hours worked. The composite index of coincident indicators for SIC 32 is itself a leading indicator of the U.S. economy. It leads the U.S. business cycle an average of 3.6 months at both peaks (end of an economic expansion) and troughs (end of an economic downturn), and it leads at 67% of the turning points from 1948 onward.

Leading indicators

Leading indicators represent various economic activities that can point to near-term changes in industry activity. The following four indicators proved to be reliable at signaling major changes in economic activity in the stone, clay, glass, and concrete products industry: 1) average weekly hours worked in the stone, clay, glass, and concrete products industry; 2) an index of new private housing units authorized by building permits in the United States; 3) the Standard & Poor's stock price index for building materials companies; and 4) the yield spread between the Federal Funds interest rate and the 10-year Treasury Note interest rate. The composite leading index constructed from

these indicators turned before the coincident index at every trough and at 88% of the peaks. Although the leading index did not lead the coincident index at every peak, the average leads at troughs and peaks were 7.3 and 8.4 months respectively, for an overall lead of 7.8 months.

This report was produced at the U.S. Geological Survey by the Minerals Information Team. For more information about these indexes contact Gail James (703-648-4915), e-mail (gjames@usgs.gov), or Ken Beckman (703-648-4916), e-mail (kbeckman@usgs.gov).

The USGS also produces *Mineral Industry Surveys* (MIS) for virtually all industrial minerals important to the U.S. economy. These include MISs for Cement, Clays, Crushed Stone, Dimension Stone, and Construction Sand and Gravel. Information on how to access these reports is available on the World Wide Web at: http://minerals.usgs.gov/minerals/pubs/

Tables and charts follow.

Table 1.
The Stone, Clay, Glass, and Concrete Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1998				
June	179.2r	3.4r	143.6r	3.2r
July	181.4r	5.1	145.1r	4.5r
August	180.3r	3.2r	145.6r	4.5r
September	175.8r	-2.0r	145.7r	3.8r
October	178.3r	0.4r	147.1r	5.1r
November	182.0r	4.0	148.5r	6.1r
December	182.7r	3.9r	150.1r	7.3r
1999				
January	184.0r	4.7r	150.4r	6.7r
February	182.5r	2.5r	150.4	5.9r
March	179.0r	-1.5r	149.2r	3.6r
April	180.7r	0.3r	149.3r	3.1r
May	183.8	3.4	150.9	4.4

r: *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 2.
The Contribution of Each Stone, Clay, Glass, and Concrete Products Index Component to the Percent Change in the Index from the Previous Month

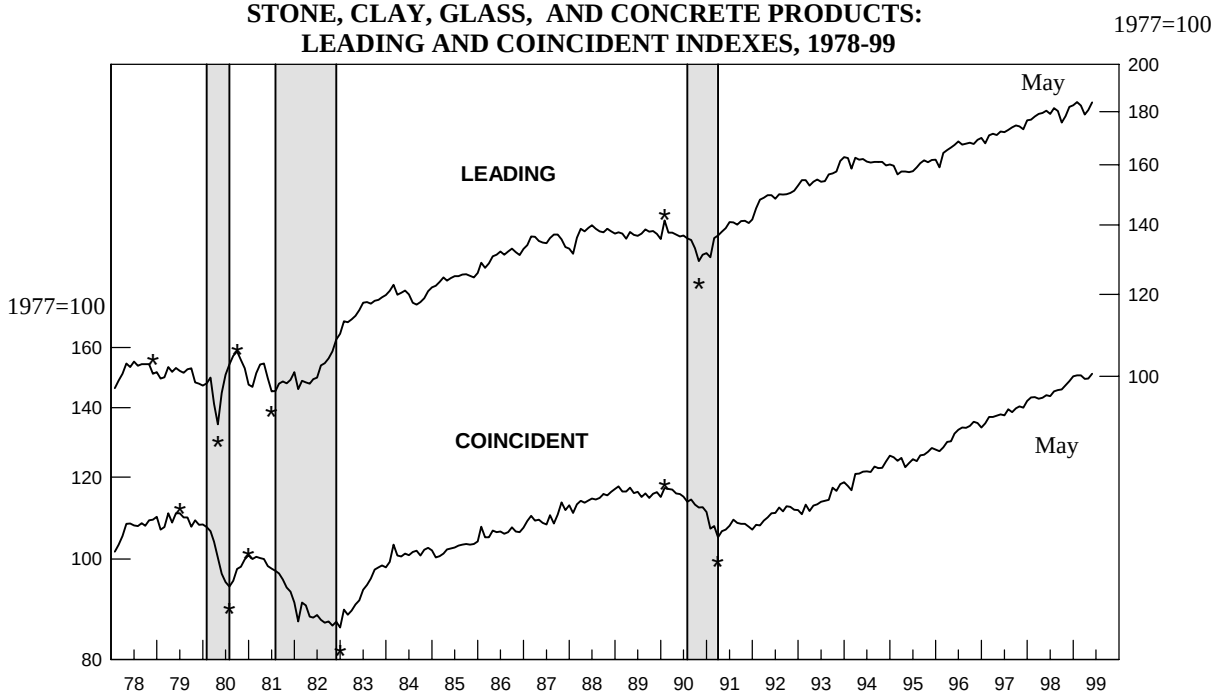
Leading Index	**April**	**May**
1. Average weekly hours, stone, clay, glass, and concrete products (SIC 32)	0.3r	0.5
2. Index of new private housing units authorized by permits	-0.4r	0.1
3. S&P stock price index, building materials companies	0.9	0.6
4. Spread between the U.S. 10-year Treasury Note and the Federal Funds rate	0.0	0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.9r	1.7
Coincident Index		
1. Industrial production index, stone, clay, glass, and concrete products (SIC 32)	-0.1r	0.4
2. Total employee hours, stone, clay, glass, and concrete products (SIC32)	0.3r	0.5
3. Shipments of stone, clay, glass, and concrete products (SIC 32)	-0.3	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.0r	1.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Standard & Poors's; 4, Federal Reserve Board, Conference Board, and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted, except 3 of the leading index.

NA: *Not available* ***r:*** *revised*

Chart 1.

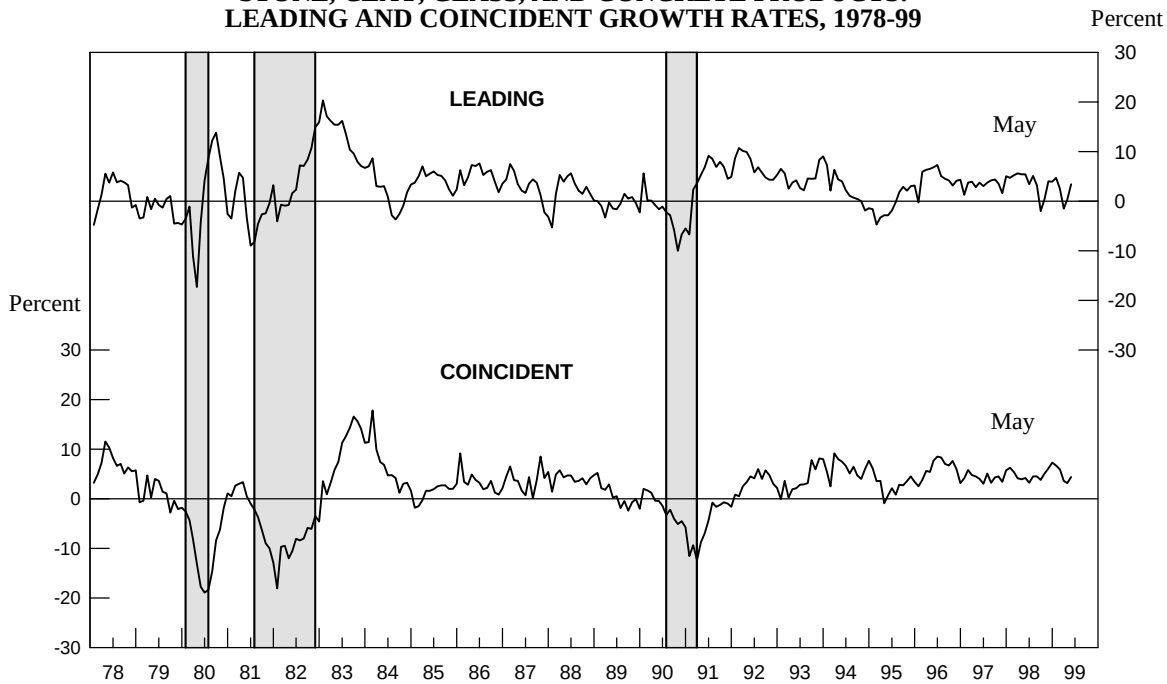
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1978-99



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes. More than 50% of the value of shipments of stone, clay, glass, and concrete products is used in the construction industry.

Chart 2.

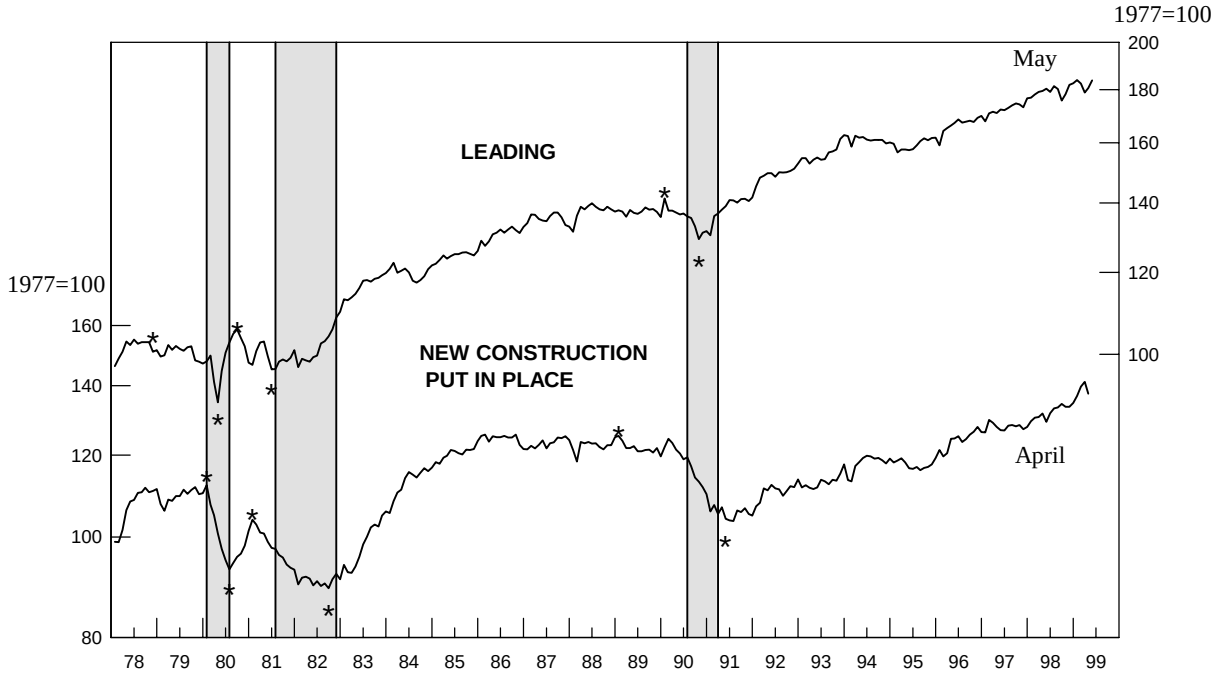
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1978-99



Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 3.

STONE, CLAY, GLASS, AND CONCRETE PRODUCTS LEADING INDEX and INDEX OF VALUE OF NEW CONSTRUCTION PUT IN PLACE IN THE UNITED STATES, 1978-99

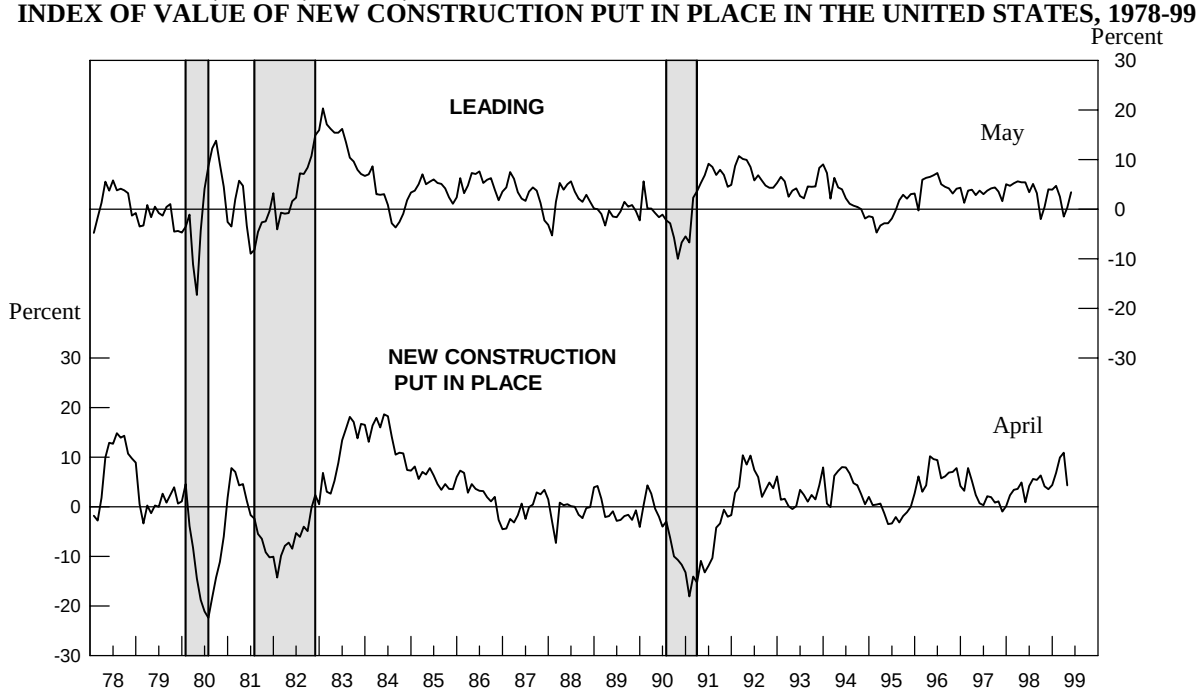


Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes. More than 50% of the value of shipments of stone, clay, glass, and concrete products is used in new construction.
Sources: U.S. Geological Survey and Bureau of the Census

Chart 4.

GROWTH RATES

STONE, CLAY, GLASS, AND CONCRETE PRODUCTS LEADING INDEX and INDEX OF VALUE OF NEW CONSTRUCTION PUT IN PLACE IN THE UNITED STATES, 1978-99



Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.